

to

Economic and Technology Advancement Advisory Committee

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Clean Fuels Officer

General Comments

- District staff strongly endorses the fundamental approach and priorities noted in the report
- Added emphasis should be given to the need for technology and clean fuel innovation driven by a combination of regulatory mandates
 - …along with efficient incentives, industry cost-sharing and balanced market support mechanisms, etc.
- The report would be stronger if the complimentary nature of regulatory "performance standards" was acknowledged.



on 6 Specific Core Areas:



 Deployment of enhanced energy efficiency and demand side management approaches which emphasize the importance of "constant improvement" at the consumer level, as well as industrial and commercial segments;



 Deployment of 1,000s of MW of utility, commercial and residential scale solar, wind and other renewable generation technologies, coupled with major renewable energy transmission and distribution investment;



- Establishment of several "Institutes of Innovation" aimed at expanding the manufacturing base in the state for the following advanced technologies and approaches:
 - Battery manufacturing
 - PV and wind manufacturing
 - Biofuel collection, production and distribution
 - Urban design principles
 - Marine and port-related options



Establishment of Joint Industry / Government Research Centers

- Batteries
- Electric drive-trains
- Biofuels
- Natural gas systems
- H₂ systems





Lithium ion & other chemistries

- Advanced electric drivetrains:
 - Controllers / system architechture
 - Ultracapacitors
 - Regenerative Braking
 - Vehicle to grid interfaces
 - Smart / fast charging
 - Plug-in hybrid optimization





LNG / H2 blends, etc.



- Cellulosic E85
- Biodiesel (formulated for no NOx increase)
- Other cellulosic based biofuels
- Advanced thermo-chemical processes
- Advanced enzymatic conversion





- Advanced H₂ systems
 - Fuel cells
 - Electrolyzers
 - Bulk and on-board storage media
 - Blended fuel concepts





Regulatory mandates which serve as backstop mechanisms to drive private sector investments and reduce the risk of investment;



Creation of an independent public agency whose sole purpose is to validate, audit and enforce GHG accounting practices similar to the function which the SEC provides to financial markets.



Other comments provided:

- Carbon Trust
- "New Vehicle Technology Improvement"
- Low Carbon Fuel Standard
- Shifting demand for mobility & goods movement
- Congestion pricing & commute trip reduction
- Electricity and natural gas sector



Some specific ideas:

- RDD&D benchmarks & roadmaps as foundation for Carbon Trust
- Integration of LCFS & optimized vehicle technologies
 - e.g., PHEV / FFVs
- Statewide integrated utility resource planning
- Roadmap for maximum deployment of renewables
 - Identify CA capacity for > 20,000 MW of renewable capacity
- Recognition that CCS waste stream could provide a path for CO₂ as a feedstock for fuel production via the Olah process

Thank you for this opportunity!

